

ABSTRACT

A database system and method allows a user to write program code in a high-level programming language that implements a class that defines the structure of a user-defined type and methods that can be invoked on instances of the type. The class is then registered with the database system, which enforces a specific contract for user-defined types against the class. The contract comprises the following requirements. First, the class must specify one of a plurality of different formats for persisting instances of the user-defined type in a database store. Second, the class must be capable of returning a null value for the user-defined type. Third, the class must provide a method for converting the user-defined type to another type. Once these requirements are satisfied, the database system enables instances of the user-defined type to be created. A user-defined type can be used in all contexts where any other built-in type can be used. This includes defining columns of tables, declaring variables and parameters to functions and stored procedures, and evaluating expressions of the user-defined type in SQL queries and updates. Preferably, the database system stores metadata about the user-defined type for subsequent use in creating instances of the type.